Complex Social Interventions - Implementing and Evaluating them

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Example 1

- HIV/AIDS care and prevention
- Multiple component
  - Health education
  - Blood safety, testing, equipment and supplies
  - Counselling
  - Home based care
  - Micro finance
  - School programmes
  - Orphan assistance
Effective pilot – scale up?

- Scale up failed (“dissemination” strategy)
- Outcome evaluation did not give information needed to scale up

Description Limited

Components details and principles

Conditions – extra resources for pilot/special, committed chiefs

Need all components – can we adapt?

Evaluate local adaptations - Tools & skills

= Too complicated, no resources for scale up, cant evaluate adaptations
Pilots & special evaluation

Irrelevant (now)

Real world

1) feasible co-design
2) implementation 3S support?

Next>>
>> example 2
Mary: 84 yrs obstructive airways (COPD) and heart disease

Stable at home on meds, very independent

Unpaid motivational coach and security-guard - “Matty”
Mary - six weeks later

- Mary, after hospitalisation
- Sent home with no support
- Readmitted in emergency
- Avoidable cost to health system
  4600 ECU
Improvements could have helped Mary

1) System for planned return to home and support

   Community team to support Mary’s transition home.

2) Medications list – electronic

3) Transitions model – Coleman

Not implemented because

- How to implement – copy exactly? Conditions for implementing?

- BUT ALSO Finance: no investment to implement or sustain (even with ROI BsCs)

Other priorities for over-worked higher management at Health Systems Level
Lessons

Knowledge needed is more than “Is it effective under X conditions”

What conditions needed? Feasible other?
Cost?

Implementation: Structure, Strategy, Supports
Hands up if you spend most of your time

1. Education
2. Doing research
3. Practical improver or implementer
4. Manager
5. Policy advisor or consultant
Other examples of CSIs

- More appropriate use – prescribing
- Hand hygiene programmes
- Bundles – CLABSI VAP
- RRT (MET)
- Breakthrough collaborative – (Intvn to an org)
- Improving cardiovascular health – to community
- Establish chronic care model
Informed, Activated Patient

Prepared, Proactive Practice Team

Functional and Clinical Outcomes:
- Increased retinal, foot and renal screening rates
- Increased Hemoglobin A1c testing
- Increased proactive/planned care
- Reduced costs
- Increased satisfaction for patient and provider

Community

Health System:
- Decision Support: Guidelines, Expert Team, Provider Education
- Delivery System Design: Multidisciplinary Group Visits, Planned visits, Retinal Screening Program
- Clinical Information Systems
- On-line Registry, Practice Reports, Reminders, Patient Summaries

Self-Management Support:
- Right Track Notebook/Phone Program,
- Lorig Support Groups

System Design:
- Multidisciplinary Group Visits,
- Planned visits,
- Retinal Screening Program

Decision Support:
- Guidelines,
- Expert Team,
- Provider Education

Delivery System Design:
- Multidisciplinary Group Visits,
- Planned visits,
- Retinal Screening Program

Clinical Information Systems
- On-line Registry
- Practice Reports
- Reminders
- Patient Summaries

"Different to before" List

Dis Mgmt 200;3:75
Features of CSIs

- Multiple – component
- Multi – level
  - Intervention to managers
    - To create “hungry and helping context” for
  - Project team and clinical practice
- Deliberate later change e.g. take away one component because of cost
  - Wider context changes - so need revisions
- Sequenced
  - Implementation Synchronise > problem awareness > training > use training immediately > feedback > revision
Types of CSI – “copy principles” or “copy exactly”

Principle changes
7 components of chronic care model

Prescribed changes
Drug = standardised dose and instructions
Implementation = conditions needed to follow instructions
Detailed description of exactly what and how to change

Implementation success & sustainment
>>>>>more context sensitive>>>>>
Questions

How do researchers know

a) how to implement these changes so as to test them?

b) if effective at test site

c) if effective elsewhere for other patients?

High certainty before going national
Questions

How do practitioners decide

a) if can implement,
b) if they adapt – effective?
c) Peers experience (Harvest?)
Answers - to come

- Assume unpredictable
  - Get feedback about outcomes
  - Assume other changes can influence Os

- Use RCT when can;
- Or theory-informed case evaluation or time series;
- Use already collected digital data.
References – see end PPT

- VHA published reports on evaluating CSIs and Partnership research
- Evaluations of national quality programmes and collaboratives
- 3 evidence reviews of changes improving quality and saving money
- Evaluating implementation and improvement
- Sweden smart quality registers projects
- EU integrated care digital support
- EU implementing improvements in chronic care
Example: Care transitions evaluation and reports
- Designs
- Mean for you?
- Questions to you
Reduce avoidable readmissions

Coleman care transitions model = people leaving hospital - support for self care

1) Education

2) Coach support at home
Controlled Experimental (Type 5)

Before Measures

Number of patients assigned to intervention:

Intervention:

Length of time of intervention:

After Measures

Which and when?

What effect, compared to control group?

Placebo

Number of patients assigned to placebo

10/6/2015
RCT evaluated – proven effective

- Research funded version
- Intervention specified in protocol
- Implementation not described

The Care Transitions Intervention

Results of a Randomized Controlled Trial

Eric A. Coleman, MD, MPH; Carla Parry, PhD, MSW; Sandra Chalmers, MPH; Sung-joon Min, PhD

The intervention was conducted in collaboration with a large not-for-profit capitated delivery system that cares for more than 60,000 patients 65 years or older in Colorado. At the time the study was initiated, the 30-day hospital readmission rate in this delivery system for this particular population was approximately 15%. The delivery system contracts with a single hospital, 8 skilled nursing facilities, and a single home health care agency. Patients received care from hospital-based physicians...
Disseminating Evidence-Based Care into Practice

Eric A. Coleman, MD, MPH, Susan A. Rosenbek, RN, MS, and Sarah P. Roman, MGS

Abstract

The Centers for Medicare and Medicaid Services (CMS) has launched the Partnership for Patients initiative, promising a 20% reduction in readmissions nationally across all payers by December 31, 2013. To address this ambitious goal, CMS has awarded grants to Hospital Engagement Networks, Pioneer Accountable Care Organizations, and the Community-based Care Transitions Program, as well as instituted new penalties for excessive readmission that began in October 2012. National efforts aimed at realizing this goal are predicated, in part, on our effectiveness in disseminating evidence-based care models into practice to improve outcomes and reduce costs. The Care Transitions Intervention (CTI) has been developed, tested, and disseminated to over 750 health care organizations in 40 states nationwide. Four factors promote wide-scale CTI dissemination. The first factor focuses on model fidelity whereby adopters are given insight into which elements of the intervention can be adapted and customized. The second factor concerns the selection of Transitions Coaches and reinforcement of their role through training and participation in a national peer learning network. The third factor relates to model execution with attention to integrating the intervention into existing workflows and fostering relation-
Designs – choose to match information needed & internal vs external validity

- RCT if possible
- Matched comparison
  - Exposed vs non-exposed; Stepped wedge version
- Case evaluation – theory informed 1-5 cases (description)
- Time series
- PDSA
Impact of a hospital-wide hand hygiene initiative on healthcare-associated infections: results of an interrupted time series

Kathryn B Kirkland, Katie A Homa, Rosalind A Lasky, Judy A Ptak, Eileen A Taylor, Mark E Splaine

ABSTRACT
Background: Evidence that hand hygiene (HH) reduces healthcare-associated infections has been available for almost two centuries. Yet HH compliance among different groups requires further study.

Intervention: a number of actions at different times
Implementation: structure and actions to apply this
Context
- Hospital is "context" for nursing units
- State and National regulations and financing is context for hospital
Guess which hospital department improved most over 3 yrs?
From my group, this was an important point to remember...
4) Recommendations: choosing, implementing and evaluating CSIs
Implementation: Is there guidance for adaption?

1) Previous reports (research or Q projects) for:
   - A) conditions under which change introduced
   - B) methods used to enable take up of the new way

   Ask:
   - How different are we?
   - What might we need to do to differently?

2) Use change readiness and adaption tools (see resources)

3) Find a way to get objective feedback
Does our version still work?

- How certain do you need to be?
- National investment?

- Proof proportional to a) possible harm + b) cost vs c) probable reduction in suffering
  - RRT low harm, some cost, probable reduction in suffering
  - Do we need RCT in many different hospitals before implementing?

- To spread RRT – which method?
  - Can not use RCT report - other evaluations
Does our version still work?

How certain do you need to be?

Local testing – same proportionality criteria

- Proof proportional to possible harm + cost vs probable reduction in suffering

  - For Coleman, is 1 hr training vs 3hrs still effective?

1) Ask cross-section – look for patterns

2) Consider already collected data (avoidable readmissions)

  - time series before (3hrs) vs after (1hr)

3) Use comparison 2 different wards & matched patients

10/6/2015
The 10;20;30;40 change success theory

Seed

Gardener/planting & nurture

Soil / climate

Personalities 20%
Idea 10%
Adaption/Implementation 30%

Soil receptive – staff readiness & wider Climate 40%
No intervention survives first contact with context

Implemented as planned?

Intervention plan
Ways forward

Balance external and internal validity

- More external validity
  - Generalisation: More sites & variety human subjects

- Strengthen certainty of attribution of outcomes to the intervention with theory

- Better descriptions

- Use digital: post descriptions on web & harvest to understand who does best

- Action evaluation
Strengthen practice based investigations by…

Higher level expertise & facilitation

Which data to gather and how
How to validly-attributte outcomes to intervention
= researchers or dedicated units (e.g. IMC, Kaiser, VA)

Reporting

Formats for documenting the intervention and context
Best example: AHRQ Innovations Exchange

Digital systems auto-capture & report analyses of data about improvement impact

Groups of interventions

In terms of conditions required for their successful implementation
Provide specific self assessments for probability of success given our conditions
Implications for Researchers

- To get published - *pre-study* review to shape data gathering
- Match design <> information needed by the customer
- First *describe the change and implementation*
- Observational designs: plan to account for other causes of outcomes
- Use – already collected data
  - Know data available – Q reg and access
- Estimate costs and conditions to implement
Implications for Practitioners

- Look for “proven” changes for your problem
- Assess conditions for success
  - Use tools to show leaders chances of success
- Plan feedback about progress and results
- Review and adjust frequently
Implications for Managers

- **Cost**
  - If savings, can we get investment and track?

- **Can we implement?**
  - Conditions needed
  - Can we adapt and check adaption

- **Limited research – use when can**
  - Poor descriptions (espec conditions)

- **Look for Q project case reports**
  - BMJ, LO&S, AHRQ, IE, Other
Questions to you - Which was most surprising, interesting or useful?

- Copy exactly >>>> copy principles
- Skillful adaption to fit
- Get feedback about effectiveness of our version
  - Reduce subjective bias of thinking our efforts must have an effect
  - Purpose – good enough to check – time series
  - Purpose – more certainty – comparisons to exclude other explanations
- Use already collected digital data
- Project reports
  - Format for description and outcome measures
  - Select 5 most and least successful
  - Understand and explain
- Estimate cost of problem, of solution & if savings
Stirman: types of adaptations

1. Who made the modification?
   - Individual practitioner/facilitator
   - Team
   - Non-program staff
   - Administration
   - Program developer/purveyor
   - Researcher
   - Coalition of stakeholders
   - Unknown/unspecified

2. What was modified?
   - Content (Modifications made to content itself, or that impact how aspects of the treatment are delivered)
   - Context (Modifications made to the way the overall treatment is delivered)
   - Training and Evaluation (Modifications made to the way that staff are trained in or how the intervention is evaluated)

10/6/2015
To describe “implementation approach”

Collect data about
The plan (planned strategy)
The structure of responsibilities
The actions actually carried out (achieved strategy)
The systems and supports
The situations in which implemented

…As well as describe the change intended to be implemented.
1) Bridge Model linking research and practice
   - Key ingredients
     - Dymnicki, Osher, Wandersman, & Blitz (2015)

2) Different stages implementation factors for success
   - Horner, Blitz, & Ross, 2014
     - Assess readiness before and during implementation
     - Technical assistance: build readiness and contextual fit before implementation
     - Implementation milestones for monitoring implementation progress
     - Variety of indicators & different perspectives

**INTERVENTION ELEMENTS**
- Procedure(s)
- Use in specific context(s)
- Specific set of users
- Achieve defined outcomes
- For defined population(s)

**CONTEXTUAL FIT ELEMENTS**
- Need
- Precision
- An evidence-base
- Efficiency
- Skills/competencies
- Cultural relevance
- Resources
- Administrative/organizational support

**PROCESS ELEMENTS**
- Selecting EBI
  - Initial implementation of EBI
  - Ongoing implementation and scaling up of EBI
2012: VHA “we need guidance for researchers for
a) more actionable research
b) complex interventions, challenging for trial designs”

Evaluating Complex Social Interventions
Volume 2: Guidance, Tools and Resources

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Evaluating Improvement and Implementation for Health

“This book is to be welcomed for its wide ranging Introduction to the many approaches to evaluation.” Carolyn M Clancy, Former Director, Agency for Healthcare Research and Quality (AHRQ)

“For anyone looking for a readable and complete introduction to evaluation, the search ends here. This book gives an overview of evaluation in action for making better decisions about how to improve health outcomes for individuals, communities, and nations. The emphasis on including assessments of implementation is refreshing and the examples throughout the book illuminate the concepts and plug the reader’s curiosity right to the end.” Dean L. Fissel, University of North Carolina at Chapel Hill, Senior Scientist, & Co-Director, National Implementation Research Network, USA

Evaluating Improvement and Implementation for Health describes modern evaluation methods in healthcare and policymaking, and challenges some of the assumptions of the evidence based healthcare movement:

- Are innovations always an improvement?
- Are they always worth it?
- Can they be implemented?
- More importantly, should they be implemented?

These are questions with practical consequences and questions which evaluation can answer – if we choose the right methods. This book will help you do just that – match the right evaluation method to the questions being asked.

Pragmatic, even-handed and accessible Evaluating Improvement and Implementation for Health provides an overview of the many different evaluation perspectives and methods used in the health sector. Suitable for health practitioners, managers, policy advisers, and researchers, its practical and multidisciplinary approach shows how to ensure that evaluation results in action.

About the author:

JOHN ØVRETVEIT is an award-winning author and Professor of health improvement, implementation and evaluation at the Karolinska Institute Academic Medical Center in Stockholm where he is Director of research at the medical management center of the Learning Informatics Management and Ethics Department.

www.openup.co.uk
31 savings pay for costs – certainly ("almost")

Evidence:

Does clinical coordination improve quality and save money?

A review of evidence about value improvements made by changing communication, collaboration and support for self-care

Dr John Øvretveit

June 2012
References

- Øvretveit, J 2013a Evaluating Complex Social Interventions and their Implementation: Volume 1: challenges and choices, Center for Implementation Practice and Research, (CIPRS), Veterans Health Administration, Sepulveda, Ca.

- Øvretveit, J 2013b Evaluating Complex Social Interventions and their Implementation: Volume 2: Guidance tools and resources for researchers, Center for Implementation Practice and Research, (CIPRS), Veterans Health Administration, Sepulveda, Ca.
Improvement concept
Tea Bag
Heater
Sweetner

Implementation actions
1) Get tea bag and put it in
2) Plug in warmer
3) Add Sweetner

1) Was this done?

How?
An improvement-change

A
Water

Surrounding “context” helps and hinders
Power outlet
Tea available

B
Tea

2) Was tea the outcome?

3) Not “satisfaction of tea drinker” – this is intended outcome of improvement-change

Patient
Close carers
Providers
Nothing gets implemented without “3 S”

Structure

- Director of Nursing
  - ADON Nursing (2)
    - Unit/Ward Manager (4)
    - Infection Control Coordinator (3)
  - Head of Quality (2)
    - Education Manager (3)
    - Coordinators Quality (3)
  - Charge Nurse (5)
    - Clinical Instructor Clinical Areas (4)

Project team structure

Strategy Steps over time

1) Form project team
2) Gather initial data
3) Planning & politics
4) Training

Supports

- Systems for data
- Facilitators
Quality breakthrough collaborative “3S”

**Structure responsibilities**

- **Funder**
- **Breakthrough organisers**
- **Service management**
- **Service project team**

**Strategy**

- **Select Topic**
- **Planning Group**
- **Prework**
- **Participants**
- **Codify Knowledge**

**Printed Reports**

**National Congress**

**Supports**

- E-mail
- Visits
- Assessments
- One Page Reports

**Facilitators**

- HIT
Does the improvement – change work?

- Rigorous research & projects

*QI projects that seek to make inferences, especially public inferences, about the impact*

The Joint Commission Journal on Quality and Patient Safety

Forum

Improving the Quality of Quality Improvement Projects

RCT evidence of effectiveness Improvement strategies

Effects of QI Strategies for Type 2 Diabetes on Glycemic Control

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<th>Quality Improvement Strategy</th>
<th>No. of Trials</th>
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<td>All Interventions</td>
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Points

- 2 or 3 outcomes associated with presence of intervention
- RCT & SR for maximum certainty
- If practical and delay reducing suffering or costs is justifiable
- Degree of certainty for purpose
- Effectiveness not the only question
Message

Implementers have other important questions

- Can we implement it here?
- Costs, savings & sustainment of the change or the activity of improvement?
- Certainty proportional to risk, costs and ease of implementation here
EVALUATION: To inform which decisions?

1) Nation-wide new safety practice or type of improvement programme
   - RRT, CCM, transitions/readmissions models,
   - Spread by collaborative or other approach?
   - Statins; Clot busters; CBT for some depressions

   - Rigorous scientific standards – RCT more difficult but possible

2) Local take up
   - Mandated or recommended
   - Conditions we need for success; what do we copy exactly and how?
   - Have we taken up as recommended?
Time series (multiple before/after)

ITS example: total x-ray referrals

Number of x-rays

Small increase and then decrease
… but significance only seen over time

Guidelines introduced
Outcome (Type 3)
Before-after comparison

How people were selected:

Intervention:

No. of People before:
Measures
Which and when?

Length of time of intervention:

No. of People after:
Measures
Which and when?

What effect?

Confounding variables and controls:
what, apart from the intervention, could have produced the change in the measures?
Community

Health System:
- Decision Support: Guidelines, Expert Team, Provider Education
- Delivery System Design: Multidisciplinary Group Visits, Planned visits, Retinal Screening Program
- Clinical Information Systems: On-line Registry, Practice Reports, Reminders, Patient Summaries

Version Group Health Cooperative of Puget Sound
CCM for Diabetes

Informed, Activated Patient

Productive Interactions

Prepared, Proactive Practice Team

Functional and Clinical Outcomes:
- Increased retinal, foot and renal screening rates,
- Increased Hemoglobin A1c testing,
- Increased proactive/planned care,
- Reduced costs,
- Increased satisfaction for patient and provider

Dis Mgmt 200;3:75
Subject

What information do we want from evaluations:

- Make better decisions about improvements
- Policy, county, hospital, PHC, clinical teams

CSI (improvement-change) proven elsewhere

Difficult to copy exactly

Does our version still work?

Is there guidance for adaption?
Subjects

- What information do we want from evaluations:
  - Make better decisions about improvements
  - Policy, county, hospital, PHC, clinical teams

- Not just “are fewer infections associated with the presence of Y change” - efficacy